

DEFENSE NUCLEAR FACILITIES SAFETY BOARD



STRATEGIC PLAN FY 1997 - 2002

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WHO WE ARE

The Defense Nuclear Facilities Safety Board (Board) is an independent executive branch agency charged with providing technical safety oversight of the Department of Energy's (DOE's) defense nuclear facilities. The Board, assisted by a highly qualified staff, is made up of five respected experts in the field of nuclear safety with demonstrated competence and knowledge relative to independent investigations and oversight. Congress established the Board in September 1988 in response to concerns that DOE failed to provide necessary line management oversight, and enforcement mechanisms to adequately protect public and worker health and safety at defense nuclear facilities.

Congress empowered the Board to provide advice and recommendations to the Secretary of Energy regarding public health and safety issues at these facilities. In doing so, Congress sought to provide the public with added assurance that the defense nuclear facilities required to maintain the nation's nuclear weapons stockpile are being safely designed, constructed, operated, and decommissioned.

The Risks We Face

The DOE nuclear complex includes 34 individual sites containing about 3,500 nuclear facilities and extending over 2.1 million acres, with more than 85 million square feet of building space in 13 states. Numerous radioactive and toxic materials exist throughout the defense nuclear complex, and there are many pathways by which these hazards might be released, creating risks to workers, the public, and the environment. The integrity of facilities or structures which confine hazardous materials can be threatened by earthquakes, extreme winds, floods, lightning, and other such natural phenomena. Other potential release mechanisms include operator errors, equipment malfunctions, chemical reactions, fire, ignition of explosives, and inadvertent nuclear criticality events. If these hazards and their potential release mechanisms are not carefully addressed, the consequences of a resulting accident could include exposure to unacceptable radiation levels, uptake of radioactive materials, other serious compromise of the health and safety of the public and onsite workers, and unacceptable environmental impact. For example, recent incidents involving bulging waste storage containers, ruptured drums, and contamination of workers and facilities could be precursors of potentially more serious situations. The relative extent of these risks may be appreciated by considering the following:

- ☆ *Hundreds of tons of fissionable material, in various forms, housed in more than 50 year old buildings and structures;*
- ☆ *Thousands of nuclear weapons being dismantled, evaluated, or modified;*
- ☆ *Hundreds of tons of plutonium, including components from dismantled nuclear weapons;*

- ☆ *The nation's strategic inventory of tritium gas, including thousands of individual containers removed from nuclear weapons;*
- ☆ *Thousands of tons of deteriorating nuclear fuel in water-filled storage basins;*
- ☆ *Millions of gallons of high level radioactive waste awaiting treatment, including highly radioactive isotopes in heavily shielded above-ground tanks, in addition to wastes stored underground at several sites.*

OUR CUSTOMERS

As a government agency, we see the following as those potentially affected by or interested in the Board's mission:

☆ *The Public*

☆ *The Department of Energy*

☆ *The Workers in the Defense Nuclear Complex*

☆ *The Administration and Congress*

☆ *Other Federal, State and Local Agencies*

MISSION

The Board's mandate is provided by its enabling statute, 42 U.S.C. 2286, which directs the Board to:

- ◆ Review and evaluate the content and implementation of the standards relating to the design, construction, operation, and decommissioning of defense nuclear facilities of the DOE and recommend to the Secretary of Energy those specific measures that should be adopted to ensure that public health and safety are adequately protected.
- ◆ Investigate any event or practice at a DOE defense nuclear facility which the Board determines has adversely affected or may adversely affect public health and safety.
- ◆ Review the design and construction of new DOE defense nuclear facilities.
- ◆ Analyze facility design and operational data.
- ◆ Provide a meaningful opportunity for public participation in the recommendation process.

Through these functions, the Congress intended that the Board :¹

- ◆ Assure and enhance the safety of operations of DOE's defense nuclear facilities by providing independent advice to the Secretary of Energy, and critical expertise, technical vigor, and a sense of vigilance within the Department at all levels.
- ◆ Be instrumental in helping DOE develop appropriate and operationally meaningful safety standards, and ensuring the transition of these standards into clear and consistent requirements for DOE management and contractors.
- ◆ Substantially raise the technical expertise of the Department.
- ◆ Assist and monitor the continued development of DOE's internal Environment, Safety, and Health organization.
- ◆ Above all, identify the nature and consequences of any significant potential threats to public health and safety, elevate such issues to the highest levels of authority, and inform the public.

¹ Congress stated its goals in establishing the Board and commented on its expectations for the Board in the Report of the Senate Armed Services Committee on S.1085, a predecessor to the bill which established the Board. S. Rep. No 232, 100th Cong., 1st Sess. 10 and 20-21 (1987)

NATURE OF THE BOARD'S WORK

- ◆ The Board stays closely attuned to the planning and execution of DOE's defense nuclear programs, gathering its information from a broad range of sources, including but not limited to: on-site technical evaluations by the Board and its staff, critical review of DOE safety analyses by competent technical experts, public meetings at headquarters and in the field, and daily input from Board Site Representatives assigned to the highest priority defense nuclear facilities.
- ◆ Based on the information thus gained, the Board chooses from the broad spectrum of action-forcing mechanisms granted it by law to communicate identified concerns and promote appropriate DOE corrective action. These action-forcing mechanisms include formal Recommendations to the Secretary of Energy and to the President in the case of an imminent threat to public health and safety, requests for reports from DOE, public meetings or hearings, technical exchanges and issuance of technical reports, and investigations.
- ◆ After a safety concern is identified, and communicated to DOE, the Board and its staff ensure that appropriate corrective actions are developed by DOE and its contractors, commitments are made to implement these corrective actions in a timely manner, and that these commitments are met.
- ◆ The mission of the DOE defense nuclear complex has changed significantly from year to year, since the Board's establishment, and will continue to evolve. The Board's safety oversight focuses on technical issues associated with mission-specific operations, which change with DOE's mission shifts. The Board also identifies and addresses fundamental and complex-wide safety management deficiencies, which are generally not impacted by DOE's changing mission.
- ◆ During each annual performance reporting period, as DOE's mission changes and as the Board's independent evaluations identify previously-unknown safety concerns, resources will often be re-deployed within and among the three primary areas of concentration addressed in this strategic plan.

VISION

To promote standards of excellence in all facets of health and safety oversight of the Department of Energy's (DOE) defense nuclear facilities, and to establish and institutionalize a safety culture within the DOE from the highest management levels to individual workers that insists work be done safely.

VALUES

As individuals and as a team, we strive to uphold the following values:

EXCELLENCE

We continually evaluate and upgrade our health and safety oversight capabilities, and target those DOE activities for priority attention according to the degree of risk reduction to the public's health and safety. We are committed to consider the technical and economic feasibility of our decisions and recommendations.

PEOPLE

Our greatest strength is our workforce. We aggressively built, and continue to recruit, a cadre of engineering and scientific experts. We continually develop and strengthen their skills by providing advanced formal education and hands-on training. We believe that all employees contribute to our success, and we continuously seek ways to improve.

INTEGRITY

The integrity of the Board's practices and procedures is crucial to ensure public health and safety at DOE nuclear facilities and to restore public confidence in the DOE stewardship of the defense nuclear complex. Public access to the Board is promoted by public hearings, requests for public comment, and meetings with contractors, DOE representatives, members of the public, labor unions and public interest groups.

RESPONSIBILITY

We believe that the taxpayers, the DOE, and its contractors deserve the best possible management of the Board's activities. We achieve this by conducting our independent technical oversight program based on the best available knowledge obtained via site visits, historical documentation, scientific research and analysis, technical expertise, and operational experience.

FACTORS AFFECTING THE ACHIEVEMENT OF GOALS AND OBJECTIVES

This section identifies several key assumptions that were used in the Board's strategic planning process.

- ◆ Current U.S. national security policy affecting DOE nuclear weapons stockpile stewardship and management remains unchanged.
- ◆ The Administration maintains its moratorium on the underground testing of nuclear weapons. Resumption of full-scale underground testing would require a major shift in Board resources for oversight.
- ◆ The national priorities concerning the cleanup of contaminated DOE defense nuclear facilities, a key premise in the Board's strategic plan, remain unchanged.
- ◆ No major changes in the Board's current statutory authority or responsibilities in the DOE defense nuclear complex occur.
- ◆ The startup date for the Waste Isolation Pilot Program (WIPP) does not slip. A significant delay in WIPP's opening will require a revised storage strategy for residues at Rocky Flats, impacting Board oversight plans.

- ◆ The Board's operations will be funded at \$17.5 million annually for the next six years, as stated in the President's budget request.

Should any of the following events occur, the Board's priorities will be changed significantly, requiring a reallocation of resources and a major revision to its strategic planning goals.

- ◆ A major accident or safety-significant event at a DOE facility involving special nuclear material.
- ◆ DOE's schedule for major actions in the defense nuclear complex changes based on circumstances within or beyond its control, requiring a corresponding change in the Board's oversight plan.

SAFETY OVERSIGHT PRINCIPLES

The Board executes its safety oversight responsibility according to the following principles:

- ◆ **The primary responsibility for ensuring protection of the health and safety of the public and workers, and protection of the environment belongs with DOE line managers and extends to all levels from the Secretary of Energy to the workers on the floor.**
- ◆ **As an external “action-forcing” agency, the Board influences DOE line management actions to the extent needed to achieve safety objectives.**
- ◆ **Effective safety management demands that safety expectations be clearly defined and tailored to specific hazards at all levels -- site, facility, or activity.**
- ◆ **Technical expertise is required to define controls commensurate with the identified hazards and to ensure compliance.**
- ◆ **Safety oversight responsibilities for defense nuclear facilities will not be relinquished until radiological hazards have been mitigated and until it has been determined that it is reasonable to transfer responsibilities to other agencies such as individual states or EPA for final cleanup, demolition, and environmental restoration activities.**

GENERAL GOALS

Using its action-forcing powers, the Board will effect the following outcomes:

- 1. The safety of nuclear weapons at DOE defense nuclear facilities will continue to be assured.**
- 2. Events or practices at hazardous DOE defense nuclear facilities that have adversely affected or may adversely affect public health and safety will be identified and, as needed, recommendations will be made to the Secretary of Energy identifying technically and economically feasible measures to address these hazards.**
- 3. A flexible and adaptable DOE standards-based safety management program will be established that incorporates recognized good nuclear safety practices and allows for integration of work and safety planning for work that the Department and contractors perform at its hazardous defense nuclear facilities.**
- 4. The DOE technical expertise will be improved to permit DOE to manage the hazardous work associated with defense nuclear facilities.**
- 5. Integrated safety management programs will be implemented for operations at defense nuclear facilities, with programs and controls tailored to the hazards involved.**
- 6. New defense nuclear facilities under design or construction will meet current safety standards.**

These General Goals are identified by number in the Action Plan items for each objective in the Strategic Areas of Concentration (i.e., Goal 3).

STRATEGIC AREAS OF CONCENTRATION

The Board's Strategic Plan establishes a framework for making management decisions, and describes the nature of the Board's work within three focus areas:

- I. Complex-Wide Health and Safety Issues**
- II. Management and Stewardship of the Nation's Stockpile and Nuclear Weapons Components**
- III. Hazardous Remnants of Weapons Production.**

These Strategic Areas of Concentration identify how the Board assists the Secretary of Energy in ensuring the safety of defense nuclear facilities. Each area of concentration has a set of objectives, action plans, and measurements. In meeting our responsibilities, the Board recognizes DOE's duty to do its essential national defense work without unjustifiable delay or expense.

I. COMPLEX-WIDE HEALTH AND SAFETY ISSUES

Examples of the Board's Oversight Complex-wide Health and Safety Issues

Radiological Protection

As a result of its assessments and reviews of the radiological protection programs at DOE defense nuclear facilities, the Board identified significant weaknesses in the DOE radiological protection program and issued Recommendation 91-6 in December 1991. Through this Recommendation, the Board encouraged DOE to improve its radiological protection program and to strive for excellence. Over the past six years, the radiological control program throughout the DOE complex has improved. DOE has strengthened its policies and standards, developed a solid radiation safety training program, and reinforced its organizational infrastructure for enhancing its radiological protection program. The Board will continue to encourage DOE to increase the technical competence of its radiation protection personnel and will monitor the effectiveness of the radiological protection program as an integral part of DOE's safety management program.

Development and Implementation of Sound Nuclear Safety Standards

During 1995 and 1996, DOE embarked upon a major undertaking - the Order/Requirement Reduction and Streamlining effort - to revise, improve, and upgrade many of its requirements. Of the many hundreds of orders in effect when the revision process was initiated, 51 were related to nuclear safety and the Board carefully evaluated the revision effort to the extent that it addressed these orders. The Board held public meetings to review DOE's development process for "new" safety orders and rules and concluded that DOE needed to examine more closely the total set of requirements and guidance encompassing nuclear safety. DOE managers concurred in the Board's analysis

and agreed that changes were needed to new safety orders and exemption language related to proposed rules. DOE committed to making needed changes to address the identified issues quickly.

Raising the Technical Expertise of DOE Staff

As a result of the Board's continuing emphasis on DOE's lack of adequate numbers of highly qualified technical personnel, the Richland Operations Office (DOE-RL) identified a need for added technical strength in the areas of radiological control and nuclear safety. The Board strongly encouraged DOE-RL to use the Department's excepted service hiring authority to acquire the necessary "seed" talent. DOE-RL advertised and received more than 300 applications for the eight identified excepted service positions and interviewed more than 100 people. As a result of this recruitment effort, eight new hires with substantial technical and professional credentials were added to the DOE-RL staff. Another example occurred at Oak Ridge Y-12 where the Board pointed out problems with the performance of the DOE Oak Ridge Y-12 Site Office (DOE-YSO) personnel in handling criticality safety and conduct of operations deficiencies. The DOE-YSO took significant measures to upgrade its technical expertise by conducting a nationwide search for highly technically competent candidates. DOE-YSO received over a hundred applicants and selected six new facility representatives and an experienced criticality safety specialist to oversee contractor efforts in these important areas. The extremely positive effects of these newly hired individuals have been noted by the Board's staff on numerous occasions during various functional area reviews. Both these experiences show that very positive results can occur with DOE management's determination to make such improvements and willingness to use all of the tools at their disposal.

I. COMPLEX-WIDE HEALTH AND SAFETY ISSUES

The Board will focus its efforts on ensuring that DOE performs its defense nuclear mission activities in a manner that provides for the adequate protection of the health and safety of workers and the public.

The continuing complex-wide reduction in DOE's workforce; DOE's ongoing program to revise or reduce contractor requirements specified in orders, rules, and standards; loss of contractor critical skills and facility knowledge; and existing variety in site activities and contracting approaches, require a more disciplined approach to incorporating safety in DOE's defense nuclear operations. Therefore, the Board has recommended that DOE:

- Identify the roles and responsibilities of DOE and its contractor personnel related to health and safety,**
- Define the technical competencies and experience required to satisfy these responsibilities,**
- Plan, execute, and control work activities in a disciplined, systematic manner that defines work scope, analyzes all applicable hazards, develops and implements necessary controls, and provides feedback and improvement to work processes and products.**

Within this strategic area of concentration the Board will pursue the following specific objectives:

- A. Verify that Integrated Safety Management (ISM) programs at DOE facilities are tailored to the existing hazards, developed to prescribed standards, and followed by managers and workers.**
- B. Confirm that roles, responsibilities, experience, and competencies required to protect the workers and the public are explicitly defined and implemented for both DOE and its contractor personnel.**

OBJECTIVE - I.A

Verify that Integrated Safety Management (ISM) programs at DOE facilities are tailored to the existing hazards, developed to prescribed standards, and followed by managers and workers.

ACTION PLAN

- 1. Determine the technical adequacy of new or revised health and safety related orders, rules, and standards (as drafts are made available) for use in developing ISM programs for defense nuclear facilities and, by technical interchange, public meetings, or other Board actions, cause DOE to issue new or revised standards, where necessary, that have adequate requirements for the protection of the health and safety of the workers and the public. (Goal 3)**
- 2. Review ISM program development and evaluate technical progress at DOE sites. (Goal 5)**
- 3. Perform design reviews of DOE's design/construction projects to determine appropriate application of proven principles of systems engineering, standard analytical methodology, and disciplined construction management that ensure safe start-up and operation of defense nuclear facilities. (Goal 6)**
- 4. Conduct on site reviews at DOE facilities by Board site representatives and technical staff to ensure that ISM programs identify, analyze, and control existing hazards. (Goal 5)**
- 5. Review and trend operational data to identify potential safety problems, highlight good practices, and thereby improve the safety culture through the DOE defense nuclear complex. (Goal 2)**

MEASUREMENTS

- ◆ Work is performed safely throughout the DOE weapons complex, in accordance with controls generated by ISM programs that are appropriate to the hazards of the work and documented in authorization agreements between DOE and the contractor.**
- ◆ DOE design/construction projects result in facilities that provide adequate protection of the health and safety of the workers and the public.**
- ◆ The total number of square feet of contaminated area decreases annually across the complex, while radiation exposure to workers is kept as low as reasonably achievable.**
- ◆ Safety management problems are promptly identified by contractor self-assessment and DOE oversight programs, and appropriate corrective action plans are developed and implemented without external forcing action.**
- ◆ DOE elevates ISM to an agency priority, requiring that line managers' compliance with ISM principles (as provided in DOE Policy 450.4) be assessed through an element in their annual performance plans.**

OBJECTIVE - I.B

Confirm that roles, responsibilities, experience, and competencies required to protect the workers and the public are explicitly defined and implemented for both DOE and its contractor personnel.

ACTION PLAN

- 1. Conduct specific reviews of DOE organizational documents (e.g., Functions, Responsibilities, and Authorizations Manual) and operations at DOE Headquarters and in the field, and communicate deficiencies to DOE via technical exchanges, public meetings, formal Board action. (Goals 4 & 5)**
- 2. Review DOE implementation of applicable Board Recommendations (such as Recommendation 93-3, Improving DOE Technical Capability in Defense Nuclear Facilities Programs, and Recommendation 97-2, Criticality Safety), evaluate technical adequacy, and provide identified shortcomings to DOE for corrective action. (Goal 2)**
- 3. Conduct on-site technical reviews and special studies of technical competencies applied to DOE's defense nuclear programs and report identified shortcomings in line management technical qualification requirements, qualification records, or other safety concerns. (Goals 4 & 5)**

MEASUREMENTS

- ◆ DOE and contractor line managers are knowledgeable of their responsibilities and discharge these responsibilities at Headquarters and in the field.**
- ◆ DOE and contractor line management positions with responsibility for assuring the health and safety of the workers and the public are filled by individuals with the required technical expertise and competence.**
- ◆ DOE accomplishes all commitments in implementation plans for Board recommendations.**

II. Management and Stewardship of the Nation's Stockpile and Nuclear Weapons Components

Examples of the Board's Oversight

Management and Stewardship of the Nation's Stockpile and Nuclear Weapons Components

Maintaining Nuclear Weapons Expertise

The Board has emphasized in several of its formal Recommendations the need for vigorous corrective action to address the loss of critical technical expertise due to an aging work force and downsizing of the Department. Recommendation 93-6, Maintaining Access to Nuclear Weapons Expertise in the Defense Nuclear Complex, voiced the Board's concern about the loss of safety-related weapons expertise due to retirements of personnel employed by the nuclear design laboratories and of key federal personnel. The DOE stockpile support enterprise was always a heavily expert-based system; as new weapons development and underground nuclear testing were terminated, these experts began retiring or otherwise leaving the program in great numbers. The Board's recommendation resulted in the development of a systematic DOE Knowledge Preservation Program consisting of individual interviews (over 100 in 1996 alone), required critical skills documentation, and perishable records preservation. These efforts are being conducted in direct support of Pantex stockpile support and dismantlement operations, as well as retention of safe nuclear testing capability, as required by Presidential direction.

Reduced Risk due to Aircraft Overflights

Due in large part to the Board's intensive review of the potential for an aircraft crash at the Pantex nuclear weapons storage magazines, an Overflight Working Group chaired by DOE was established in 1994 with representatives from the City of Amarillo, the Federal Aviation Administration (FAA), and the United States Air Force (USAF) to assess the feasibility of moving air traffic away from the plant. Based on recommendations from this working group, DOE funded the FAA to upgrade the navigational aids at the Amarillo

International Airport. The FAA has completed the non-precision GPS approach, constructed a backcourse localizer, and upgraded the runway lighting system. Other navigational aid upgrades are nearing completion. This joint effort will eventually eliminate most flights over Pantex and significantly reduce the risk of an aircraft crash at the site. Additionally, DOE has discussed the safety implications of aircraft overflights of Pantex with neighboring USAF bases whose aircraft use the runway for training at the Amarillo International Airport. The USAF commanders have issued safety bulletins to their aircraft squadrons that will help reduce the number of overflights of Pantex.

Improved Technical Staffing in the Amarillo Area Office

On July 20, 1994, the Board issued a letter to DOE addressing the lack of technically competent personnel on the DOE Amarillo Area Office (AAO) staff. This situation had resulted in delays in implementing nuclear safety requirements as well as a general inability to ensure the contractor's readiness to proceed with new nuclear weapons activities. The Board urged the DOE to place the highest priority on upgrading the staffing of AAO with the correct skill mix and quantity of technically qualified personnel. Because of the Board's efforts, over twenty technically competent engineering professionals were hired, many with strong nuclear industry experience. The true measure of the impact of the enhanced technical competence of the AAO staff has been in the improvements in the operations at Pantex as observed by the Board's staff during recent reviews. Improvements in the analysis, documentation and control of the safety envelope, personnel training and qualification, and control of the nuclear weapon dismantlement process can be directly attributed to the increased technical ability exhibited by the AAO staff in handling nuclear safety issues.

II. MANAGE MENT AND STEWARDSHIP OF THE NATION'S STOCKPILE AND NUCLEAR WEAPONS COMPONENTS

Nuclear weapons remain an integral part of the U.S. national security policy. By their nature, the operations to maintain a nuclear weapons stockpile involve hazards that, if unmitigated, could pose catastrophic consequences to the public and the workers. Therefore, the government must ensure with a high degree of confidence that the unique hazards of activities involving nuclear weapons and components, in addition to conventional hazards are adequately controlled in a tailored, integrated safety management system. The Board ensures that DOE conducts its nuclear weapons operations in ways that fulfill national security objectives and provide protection to the health and safety of the workers and the public.

Within this strategic area of concentration the Board will pursue the following specific objectives:

- A. Cause DOE to improve the collection, analysis, and dissemination of information related to safety as part of its weapons stockpile stewardship and management program.**
- B. Confirm that the construction of new DOE weapons facilities and the maintenance and modification of the nuclear weapons stockpile and associated research and development are performed safely using an integrated safety management approach that adequately controls the hazards associated with these activities.**
- C. Ensure that the permanent dismantlement of retired nuclear weapons and the disposition of components are completed safely in an integrated manner appropriate to the hazards of these operations.**

OBJECTIVE -II.A

Cause DOE to improve the collection, analysis, and dissemination of information related to safety as part of its weapons stockpile stewardship and management program.

ACTION PLAN

1. Monitor and advise DOE to ensure that the weapons complex develops, and maintains an adequate understanding of, and resolves health and safety issues associated with DOE's operations involving production, assembly, testing, storage, disassembly, of weapons and components. (Goals 1 & 2)
2. Evaluate DOE's effort to monitor the effects of stockpile aging and offer timely guidance on health and safety issues affecting DOE's operations. Verify that any identified safety impacts due to stockpile aging are communicated to responsible officials and are addressed in a timely manner. (Goals 1 & 2)
3. Confirm that all DOE operations involving nuclear weapons and components are conducted in accordance with prescribed controls resulting from safety analyses. (Goals 1, 2, 3 & 5)

MEASUREMENTS

- ◆ The quality of DOE's safety documentation for nuclear weapons operations (e.g. Weapons Safety Specifications, Facility Safety Analysis Reports, Hazard Analysis Reports, Nuclear Explosive Safety Study Reports) improves in comprehensiveness and integration.
- ◆ The Unreviewed Safety Question (USQ) process is executed expeditiously in a manner that clearly cites the relevant safety analyses, documenting the rationale underlying the determination.

OBJECTIVE - II.B

Confirm that the construction of new DOE weapons facilities and the maintenance and modification of the nuclear weapons stockpile and associated research and development are performed safely using an integrated safety management approach that adequately controls the hazards associated with these activities.

ACTION PLAN

1. Through design reviews, special studies, operational analysis, and using the guidance in Recommendation 95-2, Safety Management, confirm that DOE and its contractors are following agreed upon procedures for the safe surveillance and modification of the nuclear weapons stockpile. (Goals 1, 2 & 5)
2. Through reviews on site at the Pantex Plant, Y-12 at Oak Ridge, Sandia National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, the Nevada Test Site, and the Savannah River Site, confirm that DOE has established an operational basis for integrated safety management that is tailored to the hazards of the activities at these facilities. (Goals 1, 2 & 3)
3. Review the weapons-related research and experimentation activities to verify execution of an integrated safety management program. (Goals 1, 2, 3 & 5)
4. Conduct design reviews and technical interchanges concerning the construction of new DOE weapons facilities and confirm that these facilities are designed, constructed, and operated such that the completed facilities will ensure adequate protection of worker and public health and safety. (Goals 1, 2, 5 & 6)

MEASUREMENTS

- ◆ Integrated Safety Management Systems are in place and working effectively at these priority weapons complex facilities.
- ◆ The number of occurrences explicitly due to faulty procedures, or lack of proper planning, as documented through the Occurrence Reporting and Program System is reduced.
- ◆ New construction facilities at DOE weapons complex sites are designed, constructed, and operated in accordance with appropriate nuclear industry standards.

OBJECTIVE - II.C

Ensure that the permanent dismantlement of retired nuclear weapons and the disposition of components are completed safely in an integrated manner appropriate to the hazards of these operations.

ACTION PLAN

1. Through reviews conducted by the Board's site representatives at Pantex and site visits by subject matter experts, confirm that follow-on dismantlement projects meet the requirements of the Pantex Integrated Safety Process (PISP). (Goals 1, 2, 3, 4 & 5)
2. Evaluate dismantlement operations at the Oak Ridge Y-12 Plant to confirm that adequate controls addressing the hazards of the operation are consistently followed. (Goals 1, 2, 3, 4 & 5)
3. Through on-site monitoring, operational analysis, and special studies ensure that DOE safely manages tritium reservoir aging and unloading as well as improves safe storage of tritium. (Goals 1, 2, 3 & 5)

MEASUREMENTS

- ◆ There is a reduction in the number of occurrences explicitly due to faulty procedures, or lack of proper planning, as documented through the Occurance Reporting and Program System.

III. Hazardous Remnants of Weapons Production

Examples of the Board's Oversight

HAZARDOUS REMNANTS OF WEAPONS PRODUCTION

Mitigation of Hydrogen Explosion Potential at Rocky Flats

The Board became concerned that explosive amounts of hydrogen gas were being generated in tanks containing plutonium solutions at the Rocky Flats Environmental Technology Site. DOE and its contractor considered that the tanks were already adequately vented and that there was no reason for concern. A review by the Board concluded that the tanks might not be adequately vented. At the urging of the Board, DOE took gas samples from several of the tanks. These samples confirmed that hydrogen gas was present at concentrations up to fifteen times the minimum explosive limit. An explosion in one of these tanks containing this highly explosive gas presented a very serious worker safety concern. In January 1996, the Board requested that DOE take action to resolve this concern. DOE and its contractor then took corrective actions to purge and adequately vent the tanks.

Safe Storage of Plutonium Metal and Plutonium Oxide

In Recommendation 94-1, the Board recommended that all storage of plutonium metal and plutonium oxide conform with an existing draft long-term storage standard. This draft standard represented a consensus of some of the country's experts in plutonium storage. DOE initially intended to issue this draft standard as "guidance" with very loose specifications, allowing individual sites to develop specific local requirements. The Board played a key role in convincing DOE to issue a much stronger technical standard for safe long-term storage of plutonium and to apply the standard throughout the defense complex. The Board also recommended that DOE expedite its plans for repackaging plutonium metal in contact with plastic and in close proximity to plastic, because of concerns that this situation could lead to an unstable

condition. As a direct result of the Board's initiatives, DOE is now using a much improved standard for procurement of a standardized packaging line and development of standard storage containers for plutonium. DOE has now repackaged all plutonium in direct contact with plastic and is well on its way to repackaging plutonium in close proximity to plastic.

Replacement of Exhaust Filters at Hanford's B-Plant

The Board's review of the fifty-year old B-Plant at the Hanford Site found that the High Efficiency Particulate Air (HEPA) filter in the exhaust ventilation system had accumulated a high level of radioactive exposure over the lifetime of the plant and was showing signs of degradation due to age, accumulated radiation exposure, and environmental conditions. A new but unused filter unit was available for service. In addition, three previously retired filter units, each with a large amount of radioactive exposure, were isolated by water seals - a sealing method that did not provide a reliable means of isolating airborne radioactivity. These safety concerns were conveyed to DOE in a report which resulted in DOE removing the degraded HEPA filter from service and placing the new filter unit in operation. DOE also decided that a new exhaust filter system would be constructed to bypass the existing system thus permitting the water seals to be replaced by a more reliable physical barrier. These actions significantly reduced not only the potential for a radiological release to the environment due to a failure of the operating exhaust HEPA filter unit, but also the risk of radiological release due to failure of the existing water seal system.

III. HAZARDOUS REMNANTS OF WEAPONS PRODUCTION

An undesirable result of fifty years of nuclear weapons production is the hazardous surplus materials consisting of radioactive and chemically reactive residues, spent fuel, and wastes throughout the DOE complex. These include, among others: nearly 60 million gallons of highly radioactive wastes; unprocessed plutonium solutions; thousands of drums of plutonium and uranium-bearing residues awaiting processing; and more than 2,000 tons of degraded irradiated uranium fuel awaiting stabilization processing. Left unremediated, this waste represents a significant threat to the workers' and public's health and safety.

The Board will ensure that DOE places a high priority on reducing risks that these high hazard nuclear materials pose and monitors the operations and activities involved in its cleanup of defense nuclear facilities. The Board will ensure that DOE's stabilization and storage programs are performed safely and consistently and will encourage DOE to complete these activities without undue delay.

Within this strategic area of concentration the Board will pursue the following specific objectives:

- A. Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, residues, spent fuel, and wastes from the nuclear weapons program and that DOE provides for expeditious disposal.**
- B. Ensure that DOE aggressively pursues deactivation of excess defense nuclear facilities which pose a high risk to workers or the public.**

OBJECTIVE - III.A

Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, residues, spent fuel, and wastes from the nuclear weapons program and provides for expeditious disposal.

ACTION PLAN

1. Through technical exchanges with DOE, insist that high risk activities are addressed early, using demonstration projects to develop competence. (Goals 2, 3, 4 & 5)
2. Perform specialized technical reviews to ensure that stabilization is conducted using safe and proven technologies. (Goals 3, 4 & 5)
3. Utilizing a combination of dedicated technical staff assets and Board assigned site representatives provide prompt identification of emerging problems with stabilization activities requiring immediate resolution by DOE. (Goal 2)
4. Ensure new facilities for storage of plutonium and spent fuel are designed/constructed to appropriate standards. (Goal 6)

MEASUREMENTS

- ◆ In accordance with the DOE implementation plan commitments for Recommendation 94-1, Improved Schedule for Remediation of Defense Nuclear Facilities:
 - Surplus plutonium is packaged and stored in accordance with DOE-Std-3013.
 - Plutonium-bearing residues at Rocky Flats Environmental Technology Site (RFETS) are stabilized, packaged, and stored for shipment.
 - Spent fuel at Hanford and Savannah River is stabilized.
 - All plutonium and transuranic residues at Savannah River are processed.
- ◆ All single-shell waste tanks at Hanford are stabilized. The remaining tank waste will be safely stored, characterized, and provided with a system to permit retrieval, treatment, and storage for final disposition.
- ◆ Full production for Vitrification of High Level Waste (HLW) at Savannah River is attained and sustained safely.

OBJECTIVE - III.B

Ensure that DOE aggressively pursues deactivation of excess defense nuclear facilities which pose a high risk to workers or the public.

ACTION PLAN

- 1. Assess the adequacy of DOE's risk-based approach for deactivation of excess defense nuclear facilities through technical exchanges, issuing of technical reports as necessary to provide engineering evaluations, and holding public meetings as appropriate. (Goals 2, 3 & 4)**
- 2. Review DOE's risk-based approach and target list of excess high risk defense nuclear facilities for appropriate risk reduction and recommend changes as necessary to achieve the desired risk reduction. (Goals 3 & 4)**
- 3. Establish criteria for reduction and/or termination of Board oversight of deactivated facilities. (Goal 3)**

MEASUREMENTS

- ◆ DOE implements an acceptable risk-based approach for deactivation of excess high-risk defense nuclear facilities.**
- ◆ Buildings B886, B779, B771, and B707 at RFETS are deactivated.**

GENERAL GOALS		ACTION PLAN	OBJECTIVE
1	The safety of nuclear weapons at DOE defense nuclear facilities will continue to be assured.	<p>II.A-1 Monitor and advise DOE to ensure that weapons complex develops, maintains an adequate understanding of, and resolves health and safety issues associated with DOE's operations involving storage, disassembly, testing, production, and assembly of weapons and components.</p> <p>II.A-2 Evaluate DOE's effort to monitor the effects of stockpile aging and offer timely guidance on health and safety issues affecting DOE's operations. Verify that any identified safety impacts due to stockpile aging are communicated to responsible officials and are addressed in a timely manner.</p> <p>II.A-3 Confirm that all DOE operations involving nuclear weapons and components are conducted in accordance with prescribed controls resulting from safety analyses.</p> <p>II.B-1 Through design reviews, special studies, operational analysis, and using the guidance in Recommendation 95-2, Safety Management, confirm that DOE and its contractors are following agreed upon procedures for the safe surveillance and modification of the nuclear weapons stockpile.</p> <p>II.B-2 Through reviews on site at the Pantex Plant, Y-12 at Oak Ridge, Sandia National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, the Nevada Test Site, and the Savannah River Site, confirm that DOE has established an operational basis for integrated safety management that is tailored to the hazards of the activities at these facilities.</p> <p>II.B-3 Review the weapons-related research and experiment-ation activities to verify execution of an integrated safety management program.</p> <p>II.B-4 Conduct design reviews and technical interchanges concerning the construction of new DOE weapons facilities and confirm that these facilities are designed, constructed, and operated so as to ensure adequate protection of worker and public health and safety.</p> <p>II.C-1 Through reviews conducted by the Board's site representatives at Pantex and site visits by subject experts, confirm that follow-on dismantlement projects meet the requirements of the Pantex Integrated Safety Process (PISP)</p> <p>II.C-2 Evaluate dismantlement operations at the Oak Ridge Y-12 Plant to confirm that adequate controls addressing the hazards of the operation are consistently followed.</p> <p>II.C-3 Through on-site monitoring, operational analysis, and special studies ensure that DOE safely manages tritium reservoir aging and unloading as well as improves safe storage of tritium.</p>	<p>II.A Cause DOE to improve the collection, analysis, and dissemination of information related to safety as part of its weapons stockpile stewardship and management program.</p> <p>II.B Confirm that the construction of new DOE weapons facilities and the maintenance and modification of the nuclear weapons stockpile and associated research and development are performed safely using an integrated safety management approach that adequately controls the hazards associated with these facilities.</p> <p>II.C Ensure that the permanent dismantlement of retired nuclear weapons, and the disposition of components, are completed safely in an integrated manner appropriate to the hazards of these operations.</p>

	GENERAL GOALS	ACTION PLAN	OBJECTIVE
2	<p>Events or practices at hazardous DOE defense nuclear facilities that have adversely affected or may adversely affect public health and safety will be identified, and as needed, recommendations will be made to the Secretary of Energy identifying technically and economically feasible measures to address these hazards.</p>	<p>I.A-5 Review and trend operational data to identify potential safety problems, highlight good practices, and thereby improve the safety culture through the DOE defense nuclear complex.</p> <p>I.B-2 Review DOE implementation of applicable Board Recommendations (such as Recommendation 93-3, Improving DOE Technical Capability in Defense Nuclear Facilities Programs and recommendation 97-2, Criticality Safety), evaluate technical adequacy, and provide identified shortcomings to DOE for corrective action.</p> <p>II.A-1 Monitor and advise DOE to ensure that the weapons complex develops, maintains an adequate understanding of, and resolves health and safety issues associated with DOE's operations involving storage, disassembly, testing, production, and assembly and components.</p> <p>II.A-2 Evaluate DOE's effort to monitor the effects of stockpile aging and offer timely guidance on health and safety issues affecting DOE's operations. Verify that any identified safety impacts due to stockpile aging are communicated to responsible officials and are addressed in a timely manner.</p> <p>II.A-3 Confirm that all DOE operations involving nuclear weapons and components are conducted in accordance with prescribed controls resulting from safety analyses.</p> <p>II.B-1 Through design reviews, special studies, operational analysis, and using the guidance in Recommendation 95-2, Safety Management, confirm that DOE and its contractors are following agreed upon procedures for the safe surveillance and modification of the nuclear weapons stockpile.</p> <p>II.B-2 Through reviews on site at the Pantex Plant, Y-12 at Oak Ridge, Sandia National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, the Nevada Test Site, and the Savannah River Site, confirm that DOE has established an operational basis for integrated safety management that is tailored to the hazards of the activities at these facilities.</p>	<p>I.A Verify that Integrated Safety Management (ISM) programs at DOE facilities are tailored to the existing hazards, developed to prescribed standards, and followed by managers and workers.</p> <p>I.B Confirm that roles, responsibilities, experience, and competencies required to protect the workers and the public are explicitly defined and implemented for both DOE and its contractor personnel.</p> <p>II.A Cause DOE to improve the collection, analysis, and dissemination of information related to safety as part of its weapons stockpile stewardship and management program.</p> <p>II.B Confirm that the construction of new DOE weapons facilities and the maintenance and modification of the nuclear weapons stockpile and associated research and development are performed safely using an integrated safety management approach that adequately controls the hazards associated with these activities.</p>

	GENERAL GOALS	ACTION PLAN	OBJECTIVE
2	<p>Events or practices at hazardous DOE defense nuclear facilities that have adversely affected or may adversely affect public health and safety will be identified, and as needed, recommendations will be made to the Secretary of Energy identifying technically and economically feasible measures to address these hazards.</p>	<p>II.B-3 Review the weapons-related research and experimentation activities to verify execution of an integrated safety management program.</p> <p>II.B-4 Conduct design reviews and technical interchanges concerning the construction of new DOE weapons facilities and confirm that these facilities are designed, constructed, and operated so as to ensure adequate protection of worker and public health and safety.</p> <p>II.C-1 Through reviews conducted by the Board's site representatives at Pantex and site visits by subject experts, confirm that follow-on dismantlement projects meet the requirements of the Pantex Integrated Safety Process (PISP).</p> <p>II.C-2 Evaluate dismantlement operations at the Oak Ridge Y-12 Plant to confirm that adequate controls addressing the hazards of the operations are consistently followed.</p> <p>II.C-3 Through on-site monitoring, operational analysis, and special studies, ensure that DOE safely manages tritium reservoir aging and unloading as well as improves safe storage of tritium.</p> <p>III.A-1 Through technical exchanges with DOE, insist that high risk activities are addressed early, using demonstration projects to develop competence.</p> <p>III.A-3 Utilizing a combination of dedicated technical staff assets and Board assigned site representatives, provide prompt identification of emerging problems with stabilization activities requiring immediate resolution by DOE.</p> <p>III.B-1 Assess the adequacy of DOE's risk-based approach for deactivation of excess defense nuclear facilities through technical exchanges, issuing of technical reports as necessary to provide engineering evaluations, and holding public meetings as appropriate.</p>	<p>II.B Confirm that the construction of new DOE weapons facilities and the maintenance and modification of nuclear weapons stockpile and associated research and development are performed safely using an integrated safety management approach that adequately controls the hazards associated with these activities</p> <p>II.C Ensure that the permanent dismantlement of retired nuclear weapons, and the disposition of components, are completed safely in an integrated manner appropriate to the hazards of these operations.</p> <p>III.A Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, residues, spent fuel, and wastes from the nuclear weapons program and provides for expeditious disposal.</p> <p>III.B Ensure that DOE aggressively pursues deactivation of excess defense nuclear facilities which pose a high risk to workers or the public.</p>

	GENERAL GOALS	ACTION PLAN	OBJECTIVE
3	<p>A flexible and adaptable DOE standards-based safety management program will be established that incorporates recognized good nuclear safety practices and that allows for integration of work and safety planning for work that the Department and contractors perform at its hazardous defense nuclear facilities.</p>	<p>I.A-1 Determine the technical adequacy of new or revised health and safety related orders, rules, and standards (as drafts are made available) for use in developing ISM programs for defense nuclear facilities and, by technical interchange, public meetings, or other Board actions, cause DOE to issue new or revised standards, where necessary, that have adequate requirements for the protection of the health and safety of the workers and the public.</p> <p>II.A-3 Confirm that all DOE operations involving nuclear weapons and components are conducted in accordance with prescribed controls resulting from safety analyses.</p> <p>II.B-2 Through reviews on site at the Pantex Plant, Y-12 at Oak Ridge, Sandia National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, the Nevada Test Site, and the Savannah River Site, confirm that DOE has established an operational basis for integrated safety management that is tailored to the hazards of the activities at these facilities.</p> <p>II.B-3 Review the weapons-related research and experimentation activities to verify execution of an integrated safety management program.</p> <p>II.C-1 Through reviews conducted by the Board's site representatives at Pantex and site visits by subject experts, confirm that follow-on dismantlement projects meet the requirements of the Pantex Integrated Safety Process (PISP).</p> <p>II.C-2 Evaluate dismantlement operations at the Oak Ridge Y-12 Plant to confirm that adequate controls addressing the hazards of the operation are consistently followed.</p> <p>II.C-3 Through on-site monitoring, operational analysis, and special studies ensure that DOE safely manages tritium reservoir aging and unloading as well as improves safe storage of tritium.</p> <p>III.A-1 Through technical exchanges with DOE, insist that high risk activities are addressed early, using demonstration projects to develop competence.</p>	<p>I.A Verify that Integrated Safety Management (ISM) programs at DOE facilities are tailored to the existing hazards, developed to prescribed standards, and followed by managers and workers.</p> <p>II.A Cause DOE to improve the collection, analysis, and dissemination of information related to safety as part of its weapons stockpile stewardship and management program.</p> <p>II.B Confirm that the construction of new DOE weapons facilities and the maintenance and modification of the nuclear weapons stockpile and associated research and development are performed safely using an integrated management approach that adequately controls the hazards associated with these activities.</p> <p>II.C Ensure that the permanent dismantlement of retired nuclear weapons, and the disposition of components, are completed safely in an integrated manner appropriate to the hazards of these operations.</p> <p>III.A Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, residues, spent fuel, and wastes from the nuclear weapons program and provides for expeditious disposal.</p>

GENERAL GOALS		ACTION PLAN	OBJECTIVE
3	A flexible and adaptable DOE standards-based safety management program will be established that incorporates recognized good nuclear safety practices and that allows for integration of work and safety planning for work that the Department and contractors perform at its hazardous defense nuclear facilities.	<p>III.A-2 Perform specialized technical reviews to ensure that stabilization is conducted using safe and proven technologies.</p> <p>III.B-1 Assess the adequacy of DOE's risk-based approach for deactivation of excess defense nuclear facilities through technical exchanges, issuing of technical reports as necessary to provide engineering evaluations, and holding public meetings as appropriate.</p> <p>III.B-2 Review DOE's target list of excess risk defense nuclear facilities.</p> <p>III.B-3 Establish criteria for reduction and/or termination of Board oversight of deactivated facilities.</p>	<p>III.A Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, residues, spent fuel, and wastes from the nuclear weapons program and provides for expeditious disposal.</p> <p>III.B Ensure that DOE aggressively pursues deactivation of excess defense nuclear facilities which pose a high risk to workers or the public.</p>
4	The DOE technical expertise will be improved to permit them to manage the hazardous work associated with defense nuclear facilities.	<p>I.B-1 Conduct specific reviews of DOE organizational documents (e.g., Functions, Responsibilities, and Authorizations Manual) and operations at DOE headquarters and in the field, and communicate deficiencies to DOE via technical exchanges, public meetings, formal Board action.</p> <p>I.B-3 Conduct on-site technical reviews and special studies of technical competencies applied to DOE's defense nuclear programs and report identified shortcomings in line management qualification requirements, qualification records, or other safety concerns.</p> <p>II.C-1 Through reviews conducted by the Board's site representatives at Pantex and site visits by subject experts, confirm that follow-on dismantlement projects meet the requirements of the Pantex Integrated Safety Process (PISP).</p> <p>II.C-2 Evaluate dismantlement operations at the Oak Ridge Y-12 Plant to confirm that adequate controls addressing the hazards of the operation are consistently followed.</p> <p>III.A-1 Through technical exchanges with DOE, insist that high risk activities are addressed early, using demonstration projects to develop competence.</p> <p>III.A-2 Perform specialized technical reviews to ensure that stabilization is conducted using safe and proven technologies.</p>	<p>I.B Confirm that roles, responsibilities, experience, and competencies required to protect the workers and the public are explicitly defined and implemented for both DOE and its contractor personnel.</p> <p>II.C Ensure that the permanent dismantlement of retired nuclear weapons, and the disposition of components, are completed</p> <p>III.A Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, spent fuel, and wastes from the nuclear weapons program and provides for expeditious disposal.</p>

GENERAL GOALS		ACTION PLAN	OBJECTIVE
4	The DOE technical expertise will be improved to permit them to manage the hazardous work associated with defense nuclear facilities.	III.B-1 Assess the adequacy of DOE's risk-based approach for deactivation of excess defense nuclear facilities through exchanges, issuing of technical reports as necessary to provide engineering evaluations, and holding public meetings as appropriate. III.B-2 Review DOE's target list of excess high risk defense nuclear facilities.	III.B Ensure that DOE aggressively pursues deactivation of excess defense nuclear facilities which pose a high risk to workers or the public.
5	Integrated safety management programs will be implemented for operations at defense nuclear facilities, with programs and controls tailored to the hazards involved.	I.A-2 Review ISM program development and evaluate technical progress at DOE sites. I.A-4 Conduct on site reviews at DOE facilities by Board site representatives and technical staff to ensure that ISM programs identify, analyze, and control existing hazards. I.B-1 Conduct specific reviews of DOE organizational documents (e.g., Functions, Responsibilities, and Authorizations Manual) and operations at DOE headquarters and in the field, and communicate deficiencies to DOE via technical exchanges, public meetings, formal Board action. I.B-3 Conduct on-site technical reviews and special studies of technical competencies applies to DOE's defense nuclear programs and report identified shortcomings in line management technical qualification requirements, qualification records, or other safety concerns. II.A-3 Confirm that all DOE operations involving nuclear weapons and components are conducted in accordance with prescribed controls resulting from safety analyses.	I.A Verify that Integrated Safety Management (ISM) programs at DOE facilities are tailored to the existing hazards, developed to prescribed standards, and followed by managers and workers. I.B Confirm that roles, responsibilities, experience, and competencies required to protect the workers and the public are explicitly defines and implemented for both DOE and its contractor personnel. II.A Cause DOE to improve the collection, analysis, and dissemination of information related to safety as apart of its weapons stockpile stewardship and management program.

GENERAL GOALS		ACTION PLAN	OBJECTIVE
5	Integrated safety management programs will be implemented for operations at defense nuclear facilities, with programs and controls tailored to the hazards involved.	<p>II.B-1 Through design reviews, special studies, operations analysis, and using the guidance in Recommendation 95-2, Safety Management, confirm that DOE and its contractors are following agreed upon procedures for the safe surveillance and modification of the nuclear weapons stockpile.</p> <p>II.B-3 Conduct design reviews and technical interchanges concerning the construction of new DOE weapons facilities and confirm that these facilities are designed, constructed, and operated so as to ensure adequate protection of worker and public health and safety.</p> <p>II.B-4 Review the weapons-related research and experimentation activities to verify execution of an integrated safety management program.</p> <p>II.C-1 Through reviews conducted by the Board's site representatives at Pantex and site visits by subject experts, confirm that follow-on dismantlement projects meet the requirements of the Pantex Integrated Safety Process (PISP).</p> <p>II.C-2 Evaluate dismantlement operations at the Oak Ridge Y-12 Plant to confirm that adequate controls addressing the hazards of the operation are consistently followed.</p> <p>II.C-3 Through on-site monitoring, operational analysis, and special studies ensure that DOE safely manages tritium reservoir aging and unloading as well as improves safe storage of tritium.</p> <p>III.A-1 Through technical exchanges with DOE, insist that high risk activities are addressed early, using demonstration projects to develop competence.</p> <p>III.A-2 Perform specialized technical reviews to ensure that stabilization is conducted using safe and proven technologies.</p>	<p>II.B Confirm that the construction of new DOE weapons facilities and the maintenance and modification of the nuclear weapons stockpile and associated research and development are performed safely using an integrated management approach that adequately controls the hazards associated with these activities.</p> <p>II.C Ensure that the permanent dismantlement of retired nuclear weapons, and the disposition of components, are completed safely in an integrated manner appropriate to the hazards of these operations.</p> <p>III.A Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, residues, spent fuel, and wastes from the nuclear weapons program and provides for expeditious disposal.</p>

GENERAL GOALS		ACTION PLAN	OBJECTIVE
6	New defense nuclear facilities under design or construction will meet current safety standards.	<p>I.A-3 Perform design reviews of DOE's design/construction projects to determine appropriate application of proven principles of systems engineering, standard analytical methodology, and disciplined construction management that ensure safe start-up and operation of defense nuclear facilities.</p> <p>II.B-4 Conduct design reviews and technical interchanges concerning the construction of new DOE weapons facilities and confirm that these facilities are designed, constructed, and operated so as to ensure adequate protection of worker and public health and safety.</p> <p>III.A-4 Ensure new facilities for storage of plutonium and spent fuel are designed/constructed to appropriate DOE standards.</p>	<p>I.A Verify that Integrated Safety Management (ISM) programs at DOE facilities are tailored to the existing hazards, developed to prescribed standards, and followed by managers and workers.</p> <p>III.B Confirm that the construction of new DOE weapons facilities and the maintenance and modification of the nuclear weapons stockpile and associated research and development are performed safely using an integrated safety management approach that adequately controls the hazards associated with these activities.</p> <p>III.A Ensure that DOE properly characterizes, stabilizes, processes and safely stores surplus plutonium, residues, spent fuel, and wastes from the nuclear weapons program and provides for expeditious disposal.</p>

Appendix A

Crosswalk for Goals and Objectives

	STRATEGIC AREAS OF CONCENTRATION																										
	AREA I ACTION PLANS						AREA II ACTION PLANS									AREA III ACTION PLANS											
	Objective I.A					Objective I.B			Objective II.A			Objective II.B				Objective II.C			Objective III.A				Objective III.B				
Goals	1	2	3	4	5	1	2	3	1	2	3	1	2	3	4	1	2	3	1	2	3	4	1	2	3	Totals	
1									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								10	
2					✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓					15	
3	✓										✓			✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	12
4						✓										✓	✓		✓	✓		✓	✓		✓	✓	8
5		✓			✓	✓					✓	✓		✓	✓	✓	✓	✓	✓	✓						13	
6			✓												✓							✓				3	